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The Most Unphysiological Period of Life

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THROUGHOUT all the generations of its evolution from savagery to civilization the human race has developed a pattern of dietary and of daily routine suitable to its needs. Modern scientific study has served simply to substantiate the physiological normality of this regimen.

The newborn infant has a similarly adapted pattern of existence which has been little altered until the very last few years. Primitively the infant was born with a minimum of midwifery. He was bedded with his mother and promptly put to her breast and in common with all other newborn mammals made almost constant effort at sucking during his first few days. The baby was able initially to secure only small amounts of colostrum but gradually, stimulated in part by the efforts of the baby, the maternal milk supply was established and an adaptation effected between the needs of the baby and the nourishment provided by the mother.

The initial meagreness of the breast milk was accepted as a matter of course and was practically never supplemented. Loss of weight during the first few days was expected and if this served no useful purpose it seemed at least to do the normal infant no harm. As a matter of fact frequent weighings were not done. The loss of weight was quickly regained and by the end of the first week or so the normal baby had commenced to gain and to thrive on his natural food. To be sure, the infant whose mother never produced sufficient breast milk made rather rough going of it. Successful artificial feeding was to be a much later development.

The baby was almost always delivered at home and was not subjected to innumerable contacts with other infants and attendants. Epidemic diseases of neonatal life were to be a much later hazard.

Circumcision was imposed as a rite by certain religious sects but was certainly not practiced as a medical necessity. All in all, very little was done to the newborn child which departed radically from the management of other newborn mammals, either wild or domestic.

All this has been greatly modified during the course of only a few years through the instrumentation of modern obstetrics, pediatrics, and especially of routine hospitalization during the lying-in period. Most infants are now delivered in hospitals and many of the procedures which have been introduced as safeguards for mother and infant subject the latter to artificial conditions which depart from the physiological norm. These changes merit scrutiny with regard to their complete acceptability.

The mother has been subjected to more and more procedures in order to alleviate the pains of labor and to expedite delivery. Many babies are born sufficiently affected by hypnotic, narcotic and anesthetic drugs that their first and succeeding cries are distinctly less vigorous than might be desired to initiate and to maintain respiration, and not infrequently this languor persists for one or more days. However desirable it may be for the mother to escape severe pain and despite the fact that in many ways the infant is benefited by methods which expedite delivery, there is little doubt that severe anoxia is sometimes produced by the medication employed and the effect of this anoxia on the nervous system of the infant, even when of short duration, may be far reaching and most dismal.

No sooner is the infant delivered than silver nitrate solution is dropped into his eyes. Credé prophylaxis was introduced for the control of gonorrheal ophthalmia. Infections have occurred in the past despite it, but it has been steadfastly maintained that the frequency of ophthalmia has thus been greatly reduced and the practice has been perpetuated by statute. There is no doubt, however, that the introduction of silver nitrate solution into the tearless eyes of the infant does produce a chemical conjunctivitis of varying severity and duration and sometimes leads to continued obstruction of the naso-lacrimal duct and persistent puru-

lent conjunctivitis which provokes squinting and annoyance on the part of the baby. The end result may, I believe, be of sufficient importance to interfere with the early efforts at ocular fusion and the establishment of binocular vision and thus be of far reaching importance.

As gonorrheal infections of adults are now being treated with much better success, the infant is thus provided with greatly increased protection. Treatment of the infected infant has likewise been greatly improved by the introduction of chemotherapy and anti-biotic agents. Silver preparations have been almost abandoned in therapy. It is high time that these more potent and less irritating drugs be substituted for the harmful silver nitrate in prophylaxis.

The baby has barely roused from his narcotized stupor when a bottle containing a cow's milk formula is thrust into his mouth and during the succeeding hours and days he is generally encouraged at regular intervals to accept artificial food. He may be put to the maternal breast sporadically but is never placed there with the frequency and constancy which seems to be the physiological normal for all mammals, including man, during the newborn period.

The majority of physicians, almost as though intoning a creed, will state that breast milk is the best food for the infant. Invariably, however, physicians and nurses seem to do everything possible to thwart maternal nursing. The baby is usually at some distance from the mother and frequent transport to the mother is a chore which fits poorly with hospital routine. It seems to be thought unnecessary to put the infant to breast "before the milk comes in," thus removing an important stimulus to milk production. Whatever the importance of the colostrum may be, the modern baby has little chance to benefit from it. There is usually great concern lest the mother's convalescence be too much disturbed by the infant. In those cases in which maternal nursing is not contemptuously abandoned at the outset, all concerned profess to be completely baffled by the non-appearance of breast milk and evince increasing alarm over continuing weight loss. So many things thus conspire to discourage breast feeding during the lying-in period that the majority of babies leave the hospital on completely artificial feeding.

It can easily be shown that the quantitative results of artificial feeding, as judged by weight gain, are equal or superior to those effected by natural feeding. Nature seems at times to underfeed, especially during the neonatal period, but it will require generations of experience to prove a thesis which seems commonly to be held that *maximum* nutrition is always *optimum* nutrition or that qualitative requirements are of less importance than those which are purely quantitative. Some of the experiments with rats in which longevity seemed to be poorest with infantile super-nutrition[1] might lead to sober reflection on this score. The requirements of infant nutrition are certainly not best served by methods of feeding which resemble those used to fatten the pig for early market.

The enforced separation of mother and child not only interferes with normal feeding but also effectively precludes fondling and the establishment of an adaptation between the two which gratifies an instinctive need of the mother and, almost beyond doubt, of the infant. During the lying-in period, with ample nursing care, comfort and convenience, the mother might readily become familiar with her offspring and be trained to a routine of feeding and management without any necessary deterrents to her convalescence. Instead of this she must undertake all this adjustment after she returns to her home away from skilled guidance and with the added burden of the household upon her.

While the baby is kept in the nursery there is definite risk of infection through exposure to numerous other infants and attendants. The danger of neonatal infection was never completely absent, even when most babies were born at home and handled individually but this danger has been immeasurably increased by the greater proportion of hospital deliveries, especially in recent times under the handicap of diminished personnel. This factor can be held in check only by elaborate precautions of aseptic nursing. In spite of these precautions, recent years have seen increases of epidemic disease of the newborn, especially the diarrheas of the newborn.

It goes without saying, that there are definite advantages in having skilled attendance during the newborn period but the fact must never be lost sight of that this type of care involves compensatory risks of infection of the infant's skin, gastrointestinal tract, and respiratory system. Not many years ago, newborn nurseries were not the rule; even when most infants were delivered in hospitals the baby commonly occupied the mother's room. More recently this has been changed so that mother and child are completely separated. However difficult it might be with respect to the convenience of nursing care, a return, at least in part, to a routine in which mother and child would spend most of the hospital time together would have many advantages.

The baby boy has further unhappiness imposed upon him when (almost invariably) he is circumcised. The physiological reasons for this practice escape me although it is a venerable religious rite. Mothers usually either demand it or simply accept it as the proper thing. What little can be said in its favor, perhaps with respect to cleanliness, apparently appeals to the mother who is, after all, a female, but this little is persuasively outweighed by the pain and risk thus inflicted and by the lack of any good physiological reason for it. I should be loath to imply that any serious psychic or somatic damage is thus usually inflicted although there are extant in medical writings a few bitter protests from elderly—and presumably circumcised—physicians against it.

The two or three decades which have been responsible for these profound changes in the management of the lying-in period have been accompanied by great improvement in maternal and neonatal morbidity and mortality, but one may certainly question if this improvement has been because of all these things and not in spite of some

of them. We will do well to scrutinize each detail of early infant care to determine if it fulfills a physiological optimum or constitutes simply a compromise of the normal with hospital, obstetric, and pediatric convenience. Such errors as may have crept into the management of this period are certainly not chargeable directly to the obstetrician, for the time which has wrought these changes has been one in which the pediatrician has assumed constantly increasing responsibility in the nursery.

From the standpoint of the pediatrician, at least of this pediatrician, it seems desirable that attempts be made to modify the care of the newborn infant in the following direction:

1. Mothers should receive a minimum of medication as a preliminary to delivery compatible with relative freedom from severe pain.

2. Chemotherapeutic and anti-biotic substitutes for Credé prophylaxis should promptly be explored and introduced.

3. Maternal nursing should be re-accepted as the normal method of feeding and honest efforts made to encourage it, not to defeat it.

4. Added opportunity should be provided for mother and infant to effect an acquaintance and adaptation during the lying-in period.

5. Circumcision should not be proposed as a medical necessity unless better justification for it can be advanced.

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Typhus Fever in the Second World War*

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IN most of the previous conflicts on the European continent, typhus fever caused enormous suffering and loss of life among soldiers and civilians. Because it had played a decisive role in many military campaigns of the past, typhus was regarded at the outbreak of the second World War as one of the most dangerous of the potential epidemic diseases which were expected to occur during or after the war. Although its toll among civilians in certain regions has indeed been considerable in the years 1939 to 1946, the recent developments in our knowledge of its prevention and control have achieved such remarkable results that the discussion of these developments at some length now seems pertinent. In order to provide a background for an appreciation of the new methods of combating typhus, I shall review the history of typhus and then describe the events in the second World War as they bear on our subject.

Hirsch, in his account of historical pathology says:

"The history of typhus is written in those dark pages of the world's story which tell of the grievous visitations of mankind by war, famine, and misery of every kind. In every age, as far back as the historical inquirer can follow the disease at all, typhus is met with in association with the saddest misfortunes of the populace; and it is, therefore, a well-grounded surmise that the numerous pestilences of war and famine in ancient times and in the Middle Ages, which are known to us, not from medical sources but merely from the chronicles, had included typhus fever as a prominent figure among them."[1]

The earliest scientific discussion of typhus probably is that of Fracastorius in his famous "De Contagione et Contagiosis Morbis" published in 1546.[2] The existence of other epidemic diseases, such as plague, relapsing fever, smallpox, and typhoid, at one and the same time with typhus had made difficult its recognition as a separate entity. Even the description of Fracastorius is confusing in certain respects, and not until 1837, almost 300 years later, were typhus and typhoid clearly differentiated for the medical profession by an American physician, W. W. Gerhard.[3]

In the history of Europe after the fifteenth century, there is no difficulty in finding reports of many outbreaks which most certainly were typhus fever. As early as 1489 the Spanish soldiers who had fought against the Turks in Cyprus brought typhus to Spain. At the siege of Granada 17,000 men in Ferdinand and Isabella's army died of typhus, almost six times the number killed in combat with the Moors.[4] Soon thereafter typhus appeared in Italy, where Fracastorius had occasion to study its characteristics. In 1528 the French army besieging Naples was at the point of decisive victory over the forces of Charles V, a victory which would have had enormous effects on the subsequent developments in Europe. But then, as Zinsser put it, "typhus made its political debut . . . by one of the most far-reaching and profoundly effective strokes of its entire career . . ."[5] With great rapidity it struck down 30,000 soldiers in the camps of the French, and the remnants of the army were forced to withdraw.

During this period the battles in the Balkans contributed greatly to the spread of typhus across the continent of Europe. Large forces were assembled from various parts of Germany, Italy, and France and were sent against the Turks, but many of the men fell victims to typhus before they reached the battlefields. The disease became known as the "Morbus Hungaricus" as it was disseminated throughout Europe by the soldiers returning from Hungary.[6]

During the seventeenth century typhus continued its exploits in the almost incessant military struggles of that era, affecting civilians and soldiers alike. During the Thirty Years' War, when the Swedish army under Gustavus Adol-

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